This document was too large to scan as a whole document, therefore it required breaking into smaller sections.

**Document number:** 9504723/96-PCA-019

**Title:** Transmittal of the 4843 Alkali Metal Storage Facility Closure Plan, Rev. 1 (S-4-1), the 4843 Alkali Metal Storage Facility Notice of Deficiency Response Table (S-4-1), & the 4843 Alkali Metal Storage Facility State Environmental Policy Act Checklist (S-4-1)

**Section:** 1 of 3

**Date:** 10-27-95

**Author:** Rasmussen, Dixon **Co:** DOE-RL, WHC

**Customer:** Jaraysi, Witczak **Co:** DOEC

**Reference:** DOE/RL-90-49, 9554912D

**Keywords:**

**Department of Energy**
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

OCT 27 1995

96-PCA-019

Mr. Moses N. Jaraysi
Unit Supervisor
Nuclear Waste Program
State of Washington
Department of Ecology
1315 West Fourth Avenue
Kennewick, Washington 99336-6018

Mr. Joseph J. Witczak
Unit Supervisor
Regulatory and Technical
Support Unit
Nuclear Waste Program
State of Washington
Department of Ecology
P.O. Box 47600
Olympia, Washington 98504-7600

Dear Messrs. Jaraysi and Witczak:

TRANSMITTAL OF THE 4843 ALKALI METAL STORAGE FACILITY CLOSURE PLAN, REVISION 1 (S-4-1), THE 4843 ALKALI METAL STORAGE FACILITY NOTICE OF DEFICIENCY (NOD) RESPONSE TABLE (S-4-1), AND THE 4843 ALKALI METAL STORAGE FACILITY STATE ENVIRONMENTAL POLICY ACT CHECKLIST (S-4-1)

Enclosed are DOE/RL-90-49, 4843 Alkali Metal Storage Facility Closure Plan, Revision 1 (S-4-1), the 4843 Alkali Metal Storage Facility Notice of Deficiency (NOD) Response Table (S-4-1), and the 4843 Alkali Metal Storage Facility State Environmental Policy Act (SEPA) Checklist. These documents are being submitted by the U.S. Department of Energy, Richland Operations Office (RL) and Westinghouse Hanford Company (WHC) for review by the State of Washington Department of Ecology (Ecology). Submittal of these documents in October, fulfills the agreement made between RL and Ecology for inclusion of the 4843 Alkali Metal Storage Facility Closure Plan in Modification B to the Hanford Facility Resource Conservation and Recovery Act Permit.

Copies of this transmittal will be distributed to representatives of your respective organizations as follows:

- G. P. Davis, Ecology, Kennewick
- D. Bartus, EPA
- M. N. Jaraysi, Ecology, Kennewick
- Ecology Library, Lacey

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Should you have any questions, please contact Ms. E. M. Mattlin of RL on (509) 376-2385 or Mr. F. A. Ruck III of WHC on (509) 376-9876.

Sincerely,

for James E. Rasmussen, Director
Environmental Assurance, Permits,
and Policy Division
DOE Richland Operations Office

EAP:EMM

William T. Dixon, Director
Environmental Services
Westinghouse Hanford Company

Enclosures:
1. 4843 Alkali Metal Storage Facility Closure Plan, Revision 1
2. 4843 Alkali Metal Storage Facility Notice of Deficiency (NOD) Response Table
3. 4843 Alkali Metal Storage Facility SEPA Checklist

cc w/encls:
EDMC, H6-08 (2)
G. Davis, Ecology
D. Duncan, EPA
R. Jim, YIN
M. Jaraysi, Ecology
D. Powaukee, NPT
F. Ruck III, WHC
J. Wilkinson, CTUIR

cc w/o encls:
W. Dixon, WHC
P. Miller, WHC
S. Price, WHC
R. Stanley, Ecology

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## CORRESPONDENCE DISTRIBUTION COVERSHEET

| Author | Addressee | Correspondence No. |
|---|---|---|
| J. E. Rasmussen, RL<br>W. T. Dixon, WHC<br>(Z. C. Knaus) | M. N. Jaraysi, Ecology<br>J. J. Witczak, Ecology | Incoming 9504723<br>Xref 9554912D |

Subject: TRANSMITTAL OF THE 4843 ALKALI METAL STORAGE FACILITY CLOSURE PLAN, REVISION 1 (S-4-1), THE 4843 ALKALI METAL STORAGE FACILITY NOTICE OF DEFICIENCY (NOD) RESPONSE TABLE (S-4-1), AND THE 4843 ALKALI METAL STORAGE FACILITY STATE ENVIRONMENTAL POLICY ACT CHECKLIST (S-4-1)

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# STATE ENVIRONMENTAL POLICY ACT (SEPA)

# ENVIRONMENTAL CHECKLIST FORMS

FOR

# 4843 ALKALI METAL STORAGE FACILITY

# RCRA CLOSURE PLAN

REVISION 1

SEPTEMBER 1995

WASHINGTON ADMINISTRATIVE CODE
ENVIRONMENTAL CHECKLIST FORMS
[WAC 197-11-960]

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# SEPA ENVIRONMENTAL CHECKLIST

## A. BACKGROUND

**1. Name of proposed project:**

Closure of the 4843 Alkali Metal Storage Facility (4843 AMSF). This SEPA Checklist is being submitted concurrently with the 4843 AMSF closure plan. Information contained in this checklist pertains only to the 4843 AMSF. In the context of this document, 'site' refers to only the area covered by the physical structure of the unit.

**2. Name of applicants:**

U.S. Department of Energy-Richland Operations Office (DOE-RL); and Westinghouse Hanford Company (WHC).

**3. Address and phone number of applicant and contact person:**

U.S. Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

Westinghouse Hanford Company
P.O. Box 1970
Richland, Washington 99352

Contact Persons:

J. E. Rasmussen, Division Director
Office of Environmental Assurance,
Permits, and Policy Division
(509) 376-5441

W. T. Dixon
Environmental Services
Westinghouse Hanford Company
(509) 376-0428

**4. Date checklist prepared:**

October 1995

**5. Agency requesting the checklist:**

Washington State
Department of Ecology
Mail Stop PV-11
Olympia, WA 98504-8711

**6. Proposed timing or schedule (including phasing, if applicable):**

Construction of the 4843 AMSF (originally known as Building #3) was completed in 1971. From 1971 to 1980, Building #3 was used primarily as a tool shed. In 1980, Building #3 was relocated to its current site and renamed Building 4722-E. From 1980 to 1986, Building 4722-E was used as construction support for the Fuels and Material Examination Facility. In 1986, Building 4722-E was renamed 4843 AMSF. The 4843 AMSF began receiving dangerous and mixed alkali metal waste in April 1986. The 4843 AMSF has served as a waste management unit for the storage of dangerous and mixed alkali metal waste. This material is regulated under

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the *Resource Conservation and Recovery Act* (RCRA) and by the Washington State Department of Ecology (Ecology) *Dangerous Waste Regulations*, Washington Administrative Code (WAC) Chapter 173-303.

A closure plan (DOE/RL-90-49, Revision 1) is being submitted for the closure of the 4843 AMSF. The schedule for closure has not been determined at this time. Closure of the facility would begin upon notification by Ecology, and by the United States Environmental Protection Agency (EPA), of approval of the closure plan. The closure activities would be completed within 180 calendar days after approval of the plan by Ecology and the EPA.

Final closure activities would be completed and certified in accordance with the closure plan.

7. **Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.**

No.

8. **List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.**

- This SEPA Checklist is being submitted to Ecology and the EPA concurrently with the 4843 AMSF Closure Plan.

- A RCRA Part A Dangerous Waste Permit Application for the 4843 AMSF was submitted to Ecology in September 1987. Revision 1 of the Part A Permit Application was submitted in November 1987, and Revision 2 was submitted June 4, 1991.

- A Hanford Site Facility (Sitewide) Part B Permit has been issued for the Hanford Site by the U.S. Environmental Protection Agency and the Washington State Department of Ecology (U.S. Environmental Protection Agency/State Identification Number WA7890008967). This permit contains information pertaining to the entire Hanford Site.

Additional environmental information on the Hanford Site, in general, can be found in the following references: (1) *Final Environmental Impact Statement - Disposal of Hanford Defense High-Level, Transuranic and Tank Wastes*, DOE/EIS-0113 (U.S. Department of Energy, 1987, Richland, Washington), (2) *Hanford Site National Environmental Policy Act (NEPA) Characterization*, PNL-6415 (Revision 6, Pacific Northwest Laboratory, 1994, Richland, Washington), and (3) *Draft Environmental Impact Statement -Decommissioning of Eight Surplus Production Reactors at the Hanford Site, Richland, Washington*, DOE/EIS-0119D (U.S. Department of Energy, 1989, Washington, D.C.).

9. **Do you know whether applications are pending for government approvals of other proposals directly affecting property covered by your proposal? If yes, explain.**

No other applications that would affect property associated with the 4843 AMSF are known to be pending government approval.

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10. **List any government approvals or permits that will be needed for your proposal, if known.**

Ecology is the lead agency authorized to approve the closure plan for the 4843 AMSF pursuant to the requirements of the WAC 173-303-610. The closure plan also must receive approval from the EPA. Ecology also is the lead agency for the Hanford Site Facility Part B Permit.

11. **Give a brief, complete description of your proposal, including the proposed uses and the size of the project and site.**

The proposed project is the closure of the 4843 AMSF. Clean closure is proposed as the condition for final closure of the 4843 AMSF. Clean closure is contingent on verification that all waste contaminants are removed to accepted action levels and that all equipment, structures, and/or other materials containing dangerous waste or waste residues associated with the 4843 AMSF have been removed from the site.

The 4843 AMSF, excluding parking areas and loading areas, occupies an area of 148.6 square meters (1,600 square feet). The alkali metal wastes stored in this waste management unit were sodium and lithium. Mixed alkali metal waste was stored in the northern half of the building and dangerous alkali metal waste was stored in the southern half of the building. All stored dangerous waste has been removed from the 4843 AMSF as of May 10, 1995. The mixed waste was transferred to the Hanford Central Waste Complex. The nonradioactive waste was shipped offsite to an approved TSD facility.

Alkali metals have the property of being very reactive in an air environment. As a result, any spills or releases of alkali metals are not anticipated to be found in an unreacted state. The compounds anticipated after reaction with the air are oxides, hydroxides, and carbonates of lithium and sodium. Closure would be achieved by removing surface deposits of sodium and lithium carbonates from the building and floor. Efforts would focus on the interior of the building where the waste was stored.

Closure activities would include decontamination and visual verification, or removal and disposal of the structure and equipment. These activities would consist of the following steps (as necessary):

1. Perform visual and radiological survey of building interior.

2. Decontaminate associated building equipment to below action levels.

3. Decontaminate building floor and walls.

4. Perform visual verification of the building and associated equipment to determine the effectiveness of decontamination procedures.

5. Repeat remediation and visual verification until removal of all contaminants above action levels is verified or the component is properly disposed of.

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6. Decontaminate equipment used in performing closure activities.

7. Designate and dispose of all contaminated materials and rinsates generated during the closure activities.

8. Certify that closure activities were completed in accordance with the approved plan.

Action levels refer to chemical concentrations that prompt an action. For sodium and lithium carbonates, the action level is 10 percent weight per volume; therefore, a visual inspection would be sufficient to ensure dangerous waste concentrations are below the acceptable action levels.

Following closure, if possible, the 4843 AMSF location would be restored to allow for the continued use of the building as a storage unit.

12. **Give the location of the proposal. Give sufficient information for a person to understand the precise location of the proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available.**

The 4843 AMSF is located in the northwest portion of the 400 Area of the Hanford Site approximately 8 miles (12.9 kilometers) north of Richland, Washington. Maps and plans of the 400 Area are contained in the 4843 AMSF closure plan with which this SEPA Checklist is being submitted. The west end of the 4843 AMSF provides part of the fence surrounding the 400 Area laydown area. The 4843 AMSF is located in the SE 1/4, NW 1/4, SW 1/4, Section 18, T11N, R28E.

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**EVALUATIONS FOR AGENCY USE ONLY**

## B. ENVIRONMENTAL ELEMENTS

### 1. Earth

**a. General description of the site (indicate one): Flat, rolling, hilly, steep, mountainous, other.**

Flat.

**b. What is the steepest slope on the site (approximate percent slope)?**

Two loading ramps extend down and away from the 4843 AMSF at a slope of approximately 1/2 inch per foot (4 percent). The land beneath the site is flat.

**c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.**

The soil at the 4843 AMSF consists primarily of gravelly sands. No farming is permitted on the site.

**d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.**

No.

**e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate the source of the fill.**

Does not apply.

**f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.**

Because of the flat topography, dry climate, and gravel surrounding the 4843 AMSF, large scale erosion is not expected. Minor erosion due to wind and/or precipitation could occur occasionally.

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**g. Approximately what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?**

Approximately 80 percent of the site is covered. No changes are planned.

**h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any?**

Unpaved roadways and parking areas are covered with gravel to minimize wind erosion potential because of vehicular travel. No other erosion control methods are considered necessary.

**2. Air**

**a. What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.**

Minor amounts of exhaust will be generated by vehicles used to gain access to the site. Small quantities of dust could be generated by decontamination and sampling activities.

**b. Are there any offsite sources of emissions or odors that may affect your proposal? If so, generally describe.**

No.

**c. Proposed measures to reduce or control emissions or other impacts to the air, if any?**

Standard work procedures and emission controls.

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**EVALUATIONS FOR AGENCY USE ONLY**

3. **Water**

a. **Surface:**

1) **Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.**

No.

2) **Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.**

Does not apply.

3) **Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.**

None.

4) **Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.**

No.

5) **Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.**

No.

6) **Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.**

No.

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**EVALUATIONS FOR AGENCY USE ONLY**

b. **Ground:**

1) **Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities, if known.**

No.

2) **Describe waste materials that will be discharged into the ground from septic waste tanks or other sources, if any (for example: domestic sewage; industrial, containing the following chemicals...; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.**

Does not apply.

c. **Water Runoff (including storm water):**

1) **Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.**

The Hanford Site receives 6 to 8 inches (15 to 20 centimeters) of annual precipitation. Any precipitation that occurs at the 4843 AMSF will flow away from the building and seep into the soil on and near the site. Because of the desert climate, evaporation greatly exceeds precipitation, thus, there is little recharge potential.

2) **Could waste materials enter ground or surface waters? If so, generally describe.**

No.

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**d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:**

All water used for cleaning and sampling activities will be collected and sent to an appropriate disposal unit on the Hanford Site.

**4. Plants**

**a. Check the types of vegetation found on the site:**

___ **deciduous tree: alder, maple, aspen, other**
___ **evergreen tree: fir, ceder, pine, other**
___ **shrubs**
___ **grass**
___ **pasture**
___ **crop or grain**
___ **wet soil plants: cattail, buttercup, bulrush, skunk cabbage, other**

___ **water plants: water lily, eelgrass, milfoil, other**
_x_ **other types of vegetation**

Tumbleweeds

**b. What kind and amount of vegetation will be removed or altered?**

None.

**c. List threatened or endangered species known to be on or near the site.**

None. However, additional information concerning endangered and threatened plants on the Hanford Site can be found in the environmental documents referred to in the answer to Checklist Question A.8.

**d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:**

None.

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**EVALUATIONS FOR AGENCY USE ONLY**

5. **Animals**

a. **Indicate any birds and animals which have been observed on or near the site or are known to be on or near the site:**

birds: hawk, heron, eagle, songbirds, other
mammals: deer, bear, elk, beaver, other
fish: bass, salmon, trout, herring, shellfish, other

A variety of insects, birds, and mammals common to the Hanford Site, including pigeons, songbirds, rodents, and hares, have been observed in the vicinity of the 4843 AMSF. Additional information on birds and animals on the Hanford Site can be found in the environmental documents referred to in the answer to Checklist Question A.8.

b. **List any threatened or endangered species known to be on or near the site.**

None. However, additional information concerning endangered and threatened species on the Hanford Site can be found in the environmental documents referred to in the answer to Checklist Question A.8.

c. **Is the site part of a migration route? If so, explain.**

The site is part of the region-wide Pacific flyway for waterfowl.

d. **Proposed measures to preserve or enhance wildlife, if any:**

None.

6. **Energy and Natural Resources**

a. **What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.**

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**EVALUATIONS FOR AGENCY USE ONLY**

Electricity will be used for lighting. Fuel and oil will be used for vehicles and equipment.

**b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.**

No.

**c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:**

None.

**7. Environmental Health**

**a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.**

The 4843 AMSF will be cleaned by removing or decontaminating all dangerous waste and waste residues to appropriate action levels. All proper procedures will be followed during these operations to minimize exposure to dangerous waste.

**1) Describe special emergency services that might be required.**

Hanford Site security, fire response, ambulance services, and a trained and fully equipped Hazardous Material Team are on call at all times in the event of an onsite emergency.

**2) Proposed measures to reduce or control environmental health hazards, if any:**

Environmental health hazards are expected to be minimal. Procedures to prevent and manage potential hazards are presented in the closure plan.

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**EVALUATIONS FOR AGENCY USE ONLY**

**b. Noise**

**1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?**

None.

**2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.**

Minor amounts of noise from traffic and equipment are expected on a short-term basis during day shift hours. The location of the 400 Area will prevent any detectable increase in noise levels off the Hanford Site.

**3) Proposed measures to reduce or control noise impacts, if any:**

Vehicles and equipment will meet manufacturer's requirements for noise suppression. Though not required, noise protection will be available for use at the employee's option.

**8. Land and Shoreline Use**

**a. What is the current use of the site and adjacent properties?**

The 4843 AMSF is a part of the U.S. government-owned Hanford Site, which was used for the production of special nuclear materials and is now used for the management of waste associated with the production of those materials.

**b. Has the site been used for agriculture? If so, describe.**

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No portion of the Hanford Site, including the site of the 4843 AMSF, has been used for agricultural purposes since 1943.

c. **Describe any structures on the site.**

The 4843 AMSF is a single-floor structure, on a concrete slab, assembled with an all steel structural frame, roof, and sides, Occupying an area of approximately 150 square meters (1,613 square feet). The interior of the building is open with no offices or rest rooms inside. Concrete block shielding exists along the north wall. Access to the building is provided by two large roll-up doors in the east and west ends and personnel doors in the southeast and northwest corners of the building.

d. **Will any structures be demolished? If so, what?**

No. This facility will be used as a storage unit for alkali metal product.

e. **What is the current zoning classification of the site?**

The Hanford Site is zoned by Benton County as an unclassified use district.

f. **What is the current comprehensive plan designation of the site?**

The 1985 Benton County Comprehensive Land Use Plan designates the Hanford Site as the "Hanford Reservation." Under this designation, land on the Hanford Site can be used for "activities nuclear in nature." Nonnuclear activities are authorized "if and when DOE approval for such activities is obtained."

g. **If applicable, what is the current shoreline master program designation of the site?**

Does not apply.

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**EVALUATIONS FOR AGENCY USE ONLY**

h. **Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.**

No.

i. **Approximately how many people would reside or work in the completed project?**

No people will reside in the 4843 AMSF. A limited number of employees will be assigned to work in the 4843 AMSF during closure activities.

j. **Approximately how many people would the completed project displace?**

None.

k. **Proposed measures to avoid or reduce displacement impacts, if any:**

Does not apply.

l. **Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:**

Does not apply. (Refer to Checklist Question B.8.f.)

9. **Housing**

a. **Approximately how many units would be provided, if any? Indicate whether high-, middle-, or low-income housing.**

None.

b. **Approximately how many units, if any, would be eliminated? Indicate whether high-, middle-, or low-income housing.**

None.

c. **Proposed measures to reduce or control housing impacts, if any:**

Does not apply.

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**EVALUATIONS FOR AGENCY USE ONLY**

10. **Aesthetics**

a. **What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?**

The existing 4843 AMSF has a total height of approximately 20 feet (6.1 meters). The building exterior walls and roof are steel. No new building construction is planned.

b. **What views in the immediate vicinity would be altered or obstructed?**

None.

c. **Proposed measures to reduce or control aesthetic impacts, if any:**

None.

11. **Light and Glare**

a. **What type of light or glare will the proposal produce? What time of day would it mainly occur?**

None.

b. **Could light or glare from the finished project be a safety hazard or interfere with views?**

No.

c. **What existing offsite sources of light or glare may affect your proposal?**

None.

d. **Proposed measures to reduce or control light and glare impacts, if any:**

Does not apply.

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**EVALUATIONS FOR AGENCY USE ONLY**

12. **Recreation**

a. **What designated and informal recreational opportunities are in the immediate vicinity?**

None.

b. **Would the proposed project displace any existing recreational uses? If so, describe.**

Does not apply.

c. **Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any?**

Does not apply.

13. **Historic and Cultural Preservation**

a. **Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.**

No places or objects listed on, or proposed for, national, state, or local preservation registers are known to be on or next to the 4843 AMSF. Additional information on the Hanford Site environment can be found in the environmental documents referred to in the answer to Checklist Question A.8.

b. **Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.**

There are no known archaeological, historical, or native American religious sites at or next to the 4843 AMSF. Additional information on the Hanford Site environment can be found in the environmental documents referred to in the answer to Checklist Question A.8.

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**c. Proposed measures to reduce or control impacts, if any:**

No impacts are anticipated. Where appropriate, a cultural resource review will provide the vehicle for necessary approvals required under the *National Historic Preservation Act*.

**14. Transportation**

**a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.**

Does not apply.

**b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?**

The site is not publicly accessible, and, therefore, is not served by public transportation.

**c. How many parking spaces would the completed project have? How many would the project eliminate?**

This project does not affect parking spaces.

**d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).**

No.

**e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.**

No.

**f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.**

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**EVALUATIONS FOR AGENCY USE ONLY**

When the building is used for product storage, approximately one trip each week will be made to the building.

**g. Proposed measures to reduce or control transportation impacts, if any:**

Impact will be minimized by taking multipurpose trips with several stops.

**15. Public Services**

**a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.**

No.

**b. Proposed measures to reduce or control direct impacts on public services, if any:**

Does not apply.

**16. Utilities**

**a. List utilities currently available at the site (electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other):**

Electricity is the only utility currently available at the 4843 AMSF. Portable radios are carried by personnel accessing the 4843 AMSF, and a telephone is located approximately 100 feet (30.5 meters) west of the 4843 AMSF.

**b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.**

No new utilities or general construction activities are proposed.

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**SIGNATURES**

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

for J. E. Rasmussen, Division Director
Office of Environmental Assurance,
Permits, and Policy
U.S. Department of Energy
Richland Operations Office

10/20/95
Date

W. T. Dixon
Environmental Services
Westinghouse Hanford Company

10/16/95
Date

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The following comments have been closed and consolidated as agreed during the Unit Manager Meeting of September 8, 1993:

| OPEN COMMENT | COMMENTS CLOSED AND CONSOLIDATED WITH THE OPEN COMMENT |
|---|---|
| 2 | 54, 56, 57, and 58 |
| 3 | 6, 21, 37, 38, 41, and 43 |
| 4 | 11 and 45 |
| 5 | 55 |
| 7 | 8 |
| 10 | 29 |
| 15 | 23, 24, and 25 |
| 27 | 78 and 79 |
| 31 | 42 |
| 52 | 13, 14, 17, 20, 30, 46, 66, 68, and 74 |
| 59 | 76 |

The following comments have been closed and consolidated as agreed during the Issue Resolution Meeting of March 24, 1994:

| OPEN COMMENT | COMMENTS CLOSED AND CONSOLIDATED WITH THE OPEN COMMENT |
|---|---|
| 28 | 86 |
| 39 | 63 and 67 |
| 81 | 84 |

**Note: A Data Quality Objective (DQO) session was held May 24, 1995, due to the outcome of this DQO session and agreements made by Ecology, Department of Energy and Westinghouse Hanford Company many of these comments are no longer applicable. One such agreement reached at the DQO was that no sampling for closure determination would be performed, only sampling for waste disposal. Therefore any NODs relating to analytical methods, sampling locations, or sampling media are no longer applicable. Also, as a result of this DQO session, all comments have been adequately addressed and are now considered closed.**

| NO. | COMMENTS/RESPONSE | CONCURRENCE |
|---|---|---|
| 1. | ECOLOGY COMMENT #1: General. The level of detail in this closure plan is inadequate. The closure plan must contain enough detail to allow the evaluation of whether:<br><br>1. The activities described in the plan satisfy the regulations, or<br>2. The conditions assumed in the plan adequately reflect the true conditions of the facility.<br><br>**RL/WHC RESPONSE #1: Comment is too general to address. The level of detail in this closure plan is similar to the level provided in other closure plans which are nearing final approval by Ecology.**<br><br>ECOLOGY COMMENT #2: The detail of this closure plan must be increased to allow sufficient assessment of the closure process. Should the deficiencies be addressed sufficiently, no further response is necessary.<br><br>**RL/WHC RESPONSE #2: More historical information will be added to the closure plan such as: an eyewitness account of the spills and their cleanup, as well as the outcome of the May 15, 1995 radiation survey.** | Closed per DQO of 5/24/95 |
| 2. | ECOLOGY COMMENT #1: General. According to section 4.0, Waste Characteristics, most of the waste is mixed (containing both hazardous and radioactive components). But the plan makes few references to safety protocol or cleanup procedures for the mixed waste. Control of health and safety hazards associated with the radioactive component of the waste are inadequately addressed. It is not acceptable to omit the management of the radioactive constituents from the closure plan.<br><br>Revise text accordingly to incorporate measures that deal with the radioactive component of the mixed waste. | Closed per UMM of 4/14/94 |

| NO. | COMMENTS/RESPONSE | CONCURRENCE |
|---|---|---|

RL/WHC RESPONSE #1: The purpose of the closure plan is to address the dangerous wastes and the dangerous waste components of radioactive mixed waste. For the 4843 Alkali Metal Storage Facility (AMSF), the radioactive component of the radioactive mixed waste is addressed on an "information only" basis.

The radioactive component of this waste is derived from special nuclear material (SNM). The Atomic Energy Act of 1954, as amended, is the legislation that governs this type of radioactive material.

The purpose of the radiation zone in this unit is for radiation protection from the storage of radioactive mixed waste. The use of sealed, containerized storage units has prevented radioactive material from entering the environment and from creating areas of surface contamination. The routine monthly radiation surveys show no evidence of fixed or smearable surface contamination. The lack of surface contamination indicates radioactive materials have not entered the environment.

The primary focus of this closure plan is to provide sufficient information to support clean closure relative to dangerous waste. Worker safety is addressed in Section 7.3.10 "Site Safety." The information provided relative to past radioactive mixed waste storage and potential radioactive contamination is considered sufficient to support this objective.

ECOLOGY COMMENT #2: The second paragraph of the Hanford Federal Facility Agreement and Consent Order, Section 6.3 states, "[t]he TSD units containing mixed waste will normally be closed with consideration of all hazardous substances, which includes radioactive constituents." Consequently, the focus of this closure is not limited to exclusively addressing the dangerous waste constituents. Because the dangerous and radioactive components of the mixed waste can not be segregated, it is not feasible nor prudent to address the constituents separately.

| NO. | COMMENTS/RESPONSE | CONCURRENCE |
|---|---|---|

**COMMENT CONSOLIDATION: As agreed at the Unit Managers' Meeting of September 8, 1993, the following comments have been closed and consolidated with Comment No. 2: No. 54 (General), No. 56 (4.0), No. 57 (7.3.3), and No. 58 (7.3.2).**

**RL/WHC RESPONSE #2: The closure plan will be modified to increase the coverage of radioactive waste and the radioactive portion of mixed waste relative to the *Hanford Federal Facility Agreement and Consent Order*, Section 6.3. However, this information is being provided on an 'information-only' basis to the State of Washington Department of Ecology (Ecology). Please note that neither the *Hanford Federal Facility Agreement and Consent Order* nor the *Atomic Energy Act of 1954*, as amended, grants regulatory authority for radioactive materials and/or waste or for the radioactive portion of mixed waste to Ecology. A detailed discussion of this issue is contained in *Hanford Site Comments on the Draft Permit for the Treatment, Storage, and Disposal of Dangerous Waste for the Hanford Facility*, submitted March 16, 1993.**

ECOLOGY COMMENT #3: Concur. Should the deficiencies be addressed sufficiently as agreed upon in the response and in the November 10, 1993, and December 14, 1993, Unit Manager meetings, this comment is considered closed.

CLARIFICATION PER UMM OF APRIL 14, 1994: Ecology is concurring to the general RL/WHC approach to dealing with radionuclides. Ecology and RL/WHC have agreed to leave the issue of authority for regulating radionuclides as unresolved. For the purposes of this closure plan, Ecology and RL/WHC agree that all other comments addressing radiological issues have been addressed to each party's satisfaction. Therfore, Ecology and RL/WHC agree that this comment can be closed.

| NO. | COMMENTS/RESPONSE | CONCURRENCE |
|---|---|---|
| 3. | ECOLOGY COMMENT #1: General. All facilities are likely to have some soil contamination as a result of routine drips and spills which must be removed. The closure plan must describe the procedures and criteria to be used for evaluating the extent of soil contamination, and demonstrate that the level of decontamination will satisfy the closure performance standard.<br><br>The following information should be included in the closure plan:<br><br>1. The location for background soil measurements, etc., and<br>2. The sampling and analysis methods to be used to evaluate the extent of contamination.<br><br>The closure plan must describe how contaminated soils will be managed at closure. The plan should include the following:<br><br>1. An estimate of the volume of contaminated soil, and<br>2. A description of potential treatment or disposal techniques.<br><br>**RL/WHC RESPONSE #1: It is inappropriate to assume that soil contamination is a given result of operations at this unit. This is especially true in light of existing documentation to support that no drips or spills occurred which would give cause to instigate a soil sampling program.**<br><br>**The waste stored in the 4843 AMSF is reactive, ignitable solids (metallic sodium, metallic lithium). The waste is packaged in an inert gas (such as argon) in air-tight containers to prevent fires. This packaging was done prior to shipping the waste to the 4843 AMSF. While at the 4843 AMSF, the waste containers remain sealed until removed. Because of the use of sealed containers for waste storage, "routine" drips and spills did not occur.**<br><br>**There are no free liquids associated with the waste stored in the 4843 AMSF. The waste is stored in a dry form. (The oil mentioned in Appendix C is absorbed** | Closed per Ecology NOD Response Table of 2/28/94 |

| NO. | COMMENTS/RESPONSE | CONCURRENCE |
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**oil; see response to Comment No. 4.) The metallic sodium and lithium wastes (both solids) react with moisture in the air to form solid carbonates/solid hydroxides. The equilibrium between the solid carbonates and solid hydroxides depend upon the moisture content in the air. Free liquids are not required to either generate the carbonates/hydroxides, nor are they needed for the carbonate/hydroxide equilibrium reaction.**

**Only two spills have occurred during waste storage in the 4843 AMSF. Both spills consisted of solid radioactive mixed waste and involved small quantities of material. Each spill was immediately cleaned upon detection, as documented in the Event Fact Sheets in Appendix C. Both spills consisted of solid material from either weld seams or flanges. Neither spill entered the soil.**

**Because of the use of sealed containers for waste storage, absence of free liquids, and solid nature of the waste, soil contamination is considered to be extremely unlikely. Since there is not a reasonable pathway for contamination to have entered the soil, soil sampling is not considered appropriate for this unit.**

ECOLOGY COMMENT #2: Soil sampling will be required. There are several issues which justify this requirement, which are:

1. Waste was stored outside the facility,

2. The location of waste stored outside is unknown,

3. Because the location can not be verified, it is doubtful that inspections were conducted on these drums, and

4. The spill, inspection, and inventory documentation is limited.

| NO. | COMMENTS/RESPONSE | CONCURRENCE |
|---|---|---|

Note: The response provided for this NOD does not agree with information provided in response to NOD number 5. Response to number 5 talks about a ten foot boundary around the unit, while the response to number 3 says no soil sampling is necessary.

**COMMENT CONSOLIDATION:** As agreed at the Unit Managers' Meeting of September 8, 1993, the following comments have been closed and consolidated with Comment No. 3: No. 6 (2-2/38), No. 21 (6-1/40-45), No. 37 (7-7/33-34), No. 38 (7-7/33), No. 41 (F7-1), and No. 43 (F7-3).

**RL/WHC RESPONSE #2:** Soil sampling should not be required for this unit as no reasonable pathway for contamination of the soil exists. Each issue raised in the Ecology comment is addressed as follows:

1. While waste was stored outside of the building on the west concrete ramp, it was pyrophoric metal in sealed containers. Contact with the normal atmosphere would result in a metal fire. This type of event has never occurred at the 4843 AMSF. Any leakage from the containers would have been noted when the material was inspected or when it was moved inside the building. No such events have been recorded.

2. The location of the waste containers (Containers No. 80, No. 81, and No. 82) stored outside of the building is known. The three containers were palletized and temporarily stored on the west side of the building next to the roll-up door from about February 9, 1989 to June 9, 1989 (about 4 months). The drums were stored outside because the door was inoperable.

3. As indicated in No. 2 above, the location of the drums were known and documented by the inspections. Interviews of the operator assigned to conduct the building inspections, verifies the drums stored outside the building were included in the inspections.

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**4. Record keeping at 4843 AMSF has been adequate and meets the regulatory requirements. Only two spills have occurred in the building during its life as an alkali metal storage facility and both were documented. Records of the weekly inspections of the facility have been maintained. The maximum inventory of dangerous waste ever stored at the 4843 AMSF has been included in the closure plan, Appendix C, per Washington Administrative Code (WAC) Chapter 173-303-610(3)(a)(iii).**

**In summary, there is not a reasonable pathway for contamination from the metallic lithium and sodium waste. There is no evidence to indicate that the sealed containers stored outside the building were ever breached.**

**Finally, the boundary set forth in Comment No. 5 is compatible with this comment. The Comment No. 5 RL/WHC Response #1 sets forth the rational for the 10 foot boundary. Ecology stated in Comment No. 5 Ecology Comment #2 that they concur with setting the boundary at 10 feet, pending review of aerial photos.**

ECOLOGY RESPONSE #3: Concur. Comment is closed. The reviewer requests that the additional information provided in RL/WHC's Response #2 be included in the revised closure plan.

**RL/WHC RESPONSE #3: Text will be added as requested.**

4. ECOLOGY COMMENT #1: General. The plan does not adequately address potential contamination from the oil the waste was stored in. Petroleum wastes are regulated under WAC 173-303, and therefore needs to be accounted for in the closure plan.

Close per Issue Resolution Meeting of 3/24/94

All potentially regulated dangerous waste contaminants must be considered in closure. All probable dangerous waste contaminations must be targeted for sampling and analysis. Incorporate sampling, analysis, and potential

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|---|---|---|

decontamination for petroleum wastes into the closure plan. Address potential Polychlorinated Biphenol(*sic*) (PCB) contamination of the oil.

**RL/WHC RESPONSE #1: The oil mentioned in the Appendix C inventory is not free liquid oil used for waste storage. This is oil from a sodium metal spill cleanup within the FFTF. The oil had been absorbed prior to disposal and is not in a free liquid state. Examination of the proper shipping names (PSN) and waste codes in Appendix C indicate that free oil is not present in the waste.**

**In responding to spills of reactive metal at FFTF, a pure oil (e.g., hydraulic oil, turbine oil, or mineral oil) without additives is used. Water is not used as it would react with the sodium or lithium. These types of pure oils are generally not regulated. The status of the oil, as not-regulated, is confirmed by an examination of the PSN and waste codes in Appendix C. If the oil was regulated, it would be indicated by the PSN and waste codes.**

**If polychlorinated biphenyls (PCB) were present, then they would have been identified in the waste designation process. The PSN and shipping codes do not included PCB codes.**

**The arguments on the use of sealed containers in the response to Comment No. 3 also applies to the absorbed oil.**

**Because there was no free liquid oil present and the absorbed oil is in sealed containers, there are no reasonable pathways for the oil to have entered the environment. Also, the waste designation process indicated that the absorbed oil is not regulated and does not contain PCBs. For these reasons, the absorbed oil does not need to be addressed in the closure plan.**

ECOLOGY COMMENT #2: The oil may not be regulated in its pure form (as an unused commercial chemical product), but once added to the dangerous waste, it is considered dangerous waste (WAC 173-303-070(2)(a)). Therefore, during clean

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closure decontamination verification, applicable petroleum products will be required to be incorporated into sampling parameter criteria.

**COMMENT CONSOLIDATION: As agreed at the Unit Managers' Meeting of September 8, 1993, the following comments have been closed and consolidated with Comment No. 4: No. 11 (4-1/10) and No. 45 (Appendix C).**

**RL/WHC RESPONSE #2: The non-regulated oil does not need to be incorporated into the clean closure because it is not a dangerous waste, nor does it contain dangerous waste constituents. The non-regulated oil does not fall under WAC 173-303-070(2)(a) as it is not a solid waste generated by the operation of the 4843 AMSF. The non-regulated oil was packaged concurrently with the alkali metal waste during FFTF operations.**

ECOLOGY COMMENT #3: The oil may not be regulated in its pure form (as an unused commercial chemical product), but once added to the dangerous waste, it is considered dangerous waste (WAC 173-303-070(2)(a)). Therefore, during clean closure decontamination verification, for purposes of biased sample location selection, the reviewer considers the oil to be part of the waste. The reviewer proposes that the utilization of oil constituents for decontamination verification purposes be deferred to the data quality objectives process (DQO) during which it is hoped that an agreement may be reached on closure objectives. In addition, the reviewer requests that the descriptive information regarding the oil as it is related to the waste and the management of the waste provided in RL/WHC's Response #1 be included in the revised closure plan.

**RL/WHC RESPONSE #3: As discussed at the issue resolution meeting of March 24, 1994, Ecology is using the presence of oil in the waste as justification for biassed sampling of the oil stains on the floor of the 4843 AMSF. RL/WHC does not object to this basis or to conducting biased samples of the oil stains on the floor of the 4843 AMSF.**

| NO. | COMMENTS/RESPONSE | CONCURRENCE |
|---|---|---|
| | **As agreed during the issue resolution meeting on March 24, 1993, RL/WHC and Ecology agree to close this comment. All parties recognize that the DQO process may modify any commitments made in these NOD responses.**<br><br>**(Note: As of May 24, 1995, due to the outcome of the DQO no sampling for closure determination will be performed. Also, on May 15, 1995, the day of the final radiation survey all parties agreed that no stains of concern on the floor were visible.)** | |
| 5. | ECOLOGY COMMENT #1: 2-2/15-16. The closure plan describes the boundary as the area 10 feet from the exterior wall of the facility. It is not stated if the loading pads are within the specified boundary, or how the boundary determination was reached.<br><br>The closure plan must account for the maximum extent of operation of the facility. Describe how the boundary determination was made, and if the boundary would include the loading pads. Discuss the temporary storage of waste outside the building and any evidence that this storage area was within the defined boundary. Identify all areas requiring decontamination, and describe in detail all the steps necessary to decontaminate equipment, structures, and soils during partial or final closure. Provide a list of potentially contaminated areas and equipment.<br><br>**RL/WHC RESPONSE #1: The boundary of the 4843 AMSF for the purposes of closure is stated in the document to be 10 feet from the exterior walls of the building. This "boundary" was set since the unit currently does not have a legal boundary. WAC 173-303 provides no guidance on setting the boundary of a facility. The activity at the 4843 AMSF consisted of waste storage within the building as described in the closure plan. For a brief period of time (about 3 months) some drums were stored outside of the building but within the 10 foot boundary line. The concrete drive-up ramps to the unit extend 6 feet from the building. It is** | Closed per Issue Resolution Meeting of 3/24/94 |

| NO. | COMMENTS/RESPONSE | CONCURRENCE |
|---|---|---|

considered appropriate to set the unit boundary a reasonable distance away from the exterior walls of the building as has been done.

Based on process knowledge of how the waste was normally handled, including the temporary storage of waste outside of the building, the 10 foot boundary does cover the maximum extent of operation of the unit.

From conversations with the 4843 AMSF operating personnel, the waste was stored on the loading pad located on the west end of the building. These were sealed containers that were included in the weekly inspections. As discussed in the response to Comment No. 3, there is no reasonable path for soil contamination to have occurred.

All potentially contaminated areas and equipment are currently identified in the closure plan. No additional equipment is dedicated for use in this unit. The areas located outside of the boundary specified in the closure plan are beyond the scope of the 4843 AMSF closure plan.

The information on the closure strategy is given in Section 6.0, and information on the closure activities and on the Decontamination Work Plan are given in Section 7.0.

ECOLOGY COMMENT #2: Concur with the ten foot boundary from exterior walls of facility, upon review of all available aerial photographs and/or interviews with past waste management personnel.

COMMENT CONSOLIDATION: As agreed at the Unit Managers' Meeting of September 8, 1993, the following comment has been closed and consolidated with Comment No. 5: No. 55 (General).

RL/WHC RESPONSE #2: Aerial photographs will be provided and will be made available at a future Unit Manager Meeting.

| NO. | COMMENTS/RESPONSE | CONCURRENCE |
|---|---|---|
| | ECOLOGY COMMENT #3: Concur with the ten foot boundary from exterior walls of facility, upon review of all available aerial photographs and/or interviews with past waste management personnel. Upon review and/or interviews, this comment is considered closed.<br><br>**RL/WHC RESPONSE #3: Aerial photographs were provided at the July 12, 1995 Unit Managers Meeting have been added to the Administrative Record. An action item for RL/WHC to provided aerial photographs to Ecology was added at the March 17, 1993 Unit Managers Meeting.**<br><br>**Closed per agreement between RL/WHC and Ecology at the March 24, Issue resolution meeting.** | |
| 6. | ECOLOGY COMMENT #1: 2-2/38. Exhaust fans may have allowed contaminants to be dispersed to the external environment. This, along with the storage of waste outside the unit and the potential of residual spills of waste during loading and unloading, justifies soil sampling.<br><br>Incorporate soil sampling into the plan as appropriate.<br><br>**RL/WHC RESPONSE #1: The two spills reported at the 4843 AMSF consisted of *solid* sodium carbonate and sodium hydroxide leaking from containers. The Event Reports do not indicate any airborne radioactive contamination (both spills involved radioactive material). This indicates that no dust was generated by these spills. An examination of the physical properties of these two substances reveals that neither is a volatile. Therefore, the emission of a dust or a vapor from these incidents that would be dispersed to the external environment is nonexistent. The need to develop a soil sampling program based on this potential is, therefore, considered unnecessary.**<br><br>**Also, see responses to Comments Nos. 3 and 5.** | Closed per UMM of 9/8/93 |

| NO. | COMMENTS/RESPONSE | CONCURRENCE |
|---|---|---|
| | ECOLOGY COMMENT #2: Concur with the rationale that waste was probably not dispersed from exhaust fans, but soil sampling will be required within the ten foot boundary, addressed in previous comment/response.<br><br>**RL/WHC RESPONSE #2: As agreed at the Unit Managers' Meeting of September 8, 1993, this comment has been closed and consolidated with Comment No. 3.** | |
| 7. | ECOLOGY COMMENT #1: 3-1. It is not clear if the spent piping and equipment containing waste was internally purged with inert gas before being sealed.<br><br>Elaborate on the management of the spent equipment. Specify if the equipment was purged before being sealed, if the equipment was containerized after being sealed, and if not containerized, was secondary containment utilized.<br><br>**RL/WHC RESPONSE #1: All spent piping and equipment is internally purged before being sealed inside the containers. Most spent piping and equipment are sealed inside of various DOT containers (identified in Table 3-1) with an inert gas atmosphere. In four cases involving radioactive mixed waste (item numbers 81, 82, 95, and 96), the sodium waste was sealed in the original equipment that had been purged with an inert gas atmosphere. For these four items, the sealed equipment is considered to be the container.**<br><br>**The requested information on past operations is included in Section 3.0. The description of procedures used for past operation of the 4843 AMSF will not be included and are beyond the scope of this closure plan.**<br><br>ECOLOGY COMMENT #2: The last paragraph of this response states, "past operation of the unit will not be included and are beyond the scope of the closure plan." This is an inappropriate response to the NOD. If past operations of this facility impact its closure, it is appropriate that such operations be evaluated for the purpose of decontamination and/or removal. | Closed per Ecology NOD Response Table of 2/28/94 |

| NO. | COMMENTS/RESPONSE | CONCURRENCE |
|---|---|---|
| | **COMMENT CONSOLIDATION: As agreed at the Unit Managers' Meeting of September 8, 1993, the following comment has been closed and consolidated with Comment No. 7: No. 8 (3-1/7).**<br><br>**RL/WHC RESPONSE #2: It is not clear why Ecology is requesting detailed information on past operations. It is not required by WAC 173-303-610 for closure purposes. None of the other closure plans prepared for the Hanford Site have included this information. For a Part B Permit Application, operational data is understood to be an integral part of the permit. Please provide a detailed explanation, with reference to regulations, of why this type of information is needed in a closure plan.**<br><br>ECOLOGY COMMENT #3: The additional information provided by responses to comments number 3,10, 12, 23, 51, 53, 73, and 81 satisfies the request of information on past operations. This comment is considered closed. | |
| 8. | ECOLOGY COMMENT #1: 3-1/7. Incorporate the QA/QC procedures for sealing spent equipment and drums. See previous comment.<br><br>**RL/WHC RESPONSE #1: All container sealing was done at the point of waste generation prior to shipping the waste to the 4843 AMSF. As such, the sealing operation was not part of 4843 AMSF operations.**<br><br>**The requested information on past operations is included in Section 3.0. The description of procedures used for past operation of the 4843 AMSF will not be included.**<br><br>ECOLOGY COMMENT #2: Concur with omitting container sealing QA/QC for containers sealed before transport to the unit.<br><br>Second issue, see number 7. | Closed per UMM of 9/8/93 |

| NO. | COMMENTS/RESPONSE | CONCURRENCE |
|---|---|---|
| | **RL/WHC RESPONSE #2: As agreed at the Unit Managers' Meeting of September 8, 1993, this comment has been closed and consolidated with Comment No. 7.** | |
| 9. | ECOLOGY COMMENT #1: 3-2/10-16. Section 3.2 discusses container management practices. Four parameters are said to be evaluated. The standard of evaluation is not provided.<br><br>Elaborate on the standards used (i.e. references used).<br><br>**RL/WHC RESPONSE #1: "Container condition" is a visual inspection of the container. It is visually inspected for change in shape, corrosion products, discoloration, or any other visual indications that the container has been damaged or breached.**<br><br>**The "container seal" is a visual check that the container seal is present and is intact (e.g., a gasket for a drum or that all openings in the equipment have been welded shut).**<br><br>**"Proper marking and labeling" would be determined by the requirements of Title 49, Code of Federal Regulations "Transportation" in effect at the time the waste was received at the 4843 AMSF.**<br><br>**"Valid radiological release" is applied to the container when it is removed from the radiation zone the waste was generated in. A radiological release sticker must be present on the waste container and must be properly completed for the waste container to be accepted at the 4843 AMSF. The information on a radiological release includes the name of the Health Physics Technician, date, survey number, and count.**<br><br>**The information discussed above will be incorporated into the closure plan.** | Closed per Issue Resolution Meeting of 3/24/94 |

| NO. | COMMENTS/RESPONSE | CONCURRENCE |
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**The requested information on past operations is included in Section 3.0. The description of procedures used for past operation of the 4843 AMSF will not be included.**

ECOLOGY COMMENT #2: Concur with container inspection procedures. Also, within the text of paragraph 4 of the ninth response, numerically define an acceptable count for releasing containerized radiological wastes.

Last paragraph, see number 7.

**RL/WHC RESPONSE #2: The purpose of the "valid radiological release" is to identify that there are no radiological concerns and, if there are, to identify the actual dose rate from the container (or other object). The dose rate is then the basis of how the container or object is dealt with. Also entering into this is the type of radionuclides present.**

**For the waste containers in 4843 AMSF, the maximum dose rate that would be acceptable is less than 200 millirem/hour at any point on the surface for a Contact Handled (i.e., physical contact by trained, authorized personnel is allowed) waste container of 55-gal or less. Larger containers could, but not necessarily would, have a localized area of up to 1,000 millirem/hour on the bottom or on one side. These represent the maximum limits defined in Section 4.6.1 of the *Hanford Site Solid Waste Acceptance Criteria* (WHC-EP-0063-3).**

**The containers in 4843 AMSF have maximum surface dose rates of less than about 100 millirem/hour. Generally, most containers have lower dose rates.**

ECOLOGY COMMENT #3: Concur with descriptions of container inspection procedures and numerical definition of releasable containers to be included within the text of the closure plan. This portion of the comment is considered closed.

| NO. | COMMENTS/RESPONSE | CONCURRENCE |
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Regarding the last paragraph of the comment, the additional information provided by responses to comments number 3, 10, 12, 23, 51, 53, 73, and 81 satisfies the request of information on past operations. This portion of the comment is considered closed.

**RL/WHC RESPONSE #3: Per the discussion at the issue resolution meeting on March 24, 1994, the text of the closure plan will be revised to address the following: The radiation surveys conducted as part of the container acceptance/transfer process will be used as evidence that all containers were intact and undamaged at time of arrival at the 4843 AMSF. Also, the monthly or quarterly radiation surveys will be cite a supporting evidence that there were no undocumented or uncontrolled releases while the radioactive waste was stored at the 4843 AMSF.**

**As agreed during the issue resolution meeting on March 24, 1993, RL/WHC and Ecology agree to close this comment.**

10. ECOLOGY COMMENT #1: 3-2/36-40. Non-waste Na/K mixture is stored in this unit, yet the facility is described as having only two storage areas - one for hazardous waste and the other for mixed waste.

Discuss the dual function of the unit and any impact this may have on the closure. Discuss QA/QC procedures used to segregate mixed waste from hazardous waste, and waste material from product material.

Closed per Ecology NOD Response Table of 2/28/94

**RL/WHC RESPONSE #1: Storage of the metallic sodium/potassium product mixture will not have any affect on closure. The product material was stored in special U.S. Department of Transportation shipping containers that have a stainless steel tank inside a wooden box. As such, they are easily recognizable. The waste containers are either drums, sealed piping, or other sealed containers with proper waste markings, including the hazardous waste label. Segregation was assured by the weekly visual inspection.**

| NO. | COMMENTS/RESPONSE | CONCURRENCE |
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**The requested information on past operations is included in Section 3.0. The description of procedures used for past operation of the 4843 AMSF will not be included.**

ECOLOGY COMMENT #2: The response does not address the NOD at hand. Photos of past waste/product storage configuration shown in Appendices E-5 and E-6 contradict the response provided. Photo (APP E-5) shows the product material stacked around the waste storage area. In the past product drums were very similar to waste drums, as depicted in Appendix E-5. The product is shown to be stored in drums which are not inside wooden boxes, which are the same as the waste drums, except they do not have hazardous waste stickers. The only apparent distinction between the drums is the hazardous waste sticker on the waste drums. Because it is not uncommon for drums to be mislabeled, it is possible for waste to be incorrectly managed.

Although this particular NOD does not request information on past operations, it should be noted that if past operations impact closure of the unit, it is appropriate to address such operations.

**COMMENT CONSOLIDATION: As agreed at the Unit Managers' Meeting of September 8, 1993, the following comment has been closed and consolidated with Comment No. 10: No. 29 (7-3/46).**

**RL/WHC RESPONSE #2: There have been two basic storage configurations at the 4843 AMSF. Prior to November 9, 1987, drum racks for storage of product (non-waste) were located on the north and east walls. The radioactive mixed waste containers were stored in the center of the building. Concrete block walls (dry stacked without mortar and about 4 feet high) were located on the east, north, and west sides of the radioactive mixed waste storage area for radiation protection purposes. The dangerous waste was stored along the south wall. Proper management was assured by weekly inspections and by segregation of waste.**

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| | **The large quantity of product material (lithium, sodium, sodium-potassium) shown in Figure E-5 was removed before November 9, 1987. By November 9, 1987, the product racks were removed and the storage configuration modified. Dangerous waste continued to be stored along the south wall, the east wall south of the rollup door was used for very limited amounts of product storage, radioactive mixed waste was stored between a line running approximately from the north edge of the rollup doors to the north wall.**<br><br>**Due to the presence of radioactive material, Health Physics Technicians would have been present to perform radiological surveys as necessary during the modification to the storage configuration in the 4843 AMSF.**<br><br>**The closure plan will be modified to include the information on the past storage configuration.**<br><br>ECOLOGY COMMENT #3: Concur with the inclusion of the additional description and explanation in the text of the closure plan. This comment is considered closed. | |
| 11. | ECOLOGY COMMENT #1: 4-1/10. This sentence refers to Appendix C. See comments on Appendix C.<br><br>**RL/WHC RESPONSE #1: See response to Comment No. 45.**<br><br>ECOLOGY COMMENT #2: See number 4.<br><br>**RL/WHC RESPONSE #2: As agreed at the Unit Managers' Meeting of September 8, 1993, this comment has been closed and consolidated with Comment No. 4.** | Closed per UMM of 9/8/93 |
| 12. | ECOLOGY COMMENT #1: 4-1/28. Segregation of waste is based on the radioactivity of the waste.<br><br>Provide a detailed discussion of procedures taken to assure and maintain segregation of mixed and dangerous waste. | Closed per Issue Resolution Meeting of 3/24/94 |

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**RL/WHC RESPONSE #1: The waste is segregated upon arrival at the 4843 AMSF. Segregation is based upon the labeling of the waste container with a radioactive material label upon generation. The presence of these labels was verified by the weekly inspections. Also, the monthly radiation surveys checked all containers. Detecting radiation from a non-radioactive waste container would have generated an event fact sheet. No such events occurred at the 4843 AMSF.**

**The above information will be added to the closure plan.**

**The requested information on past operations is included in Section 3.0. The description of procedures used for past operation of the 4843 AMSF will not be included.**

ECOLOGY COMMENT #2: Concur with the addition of the information provided in the response to the closure plan. Due to the monthly radiation survey schedule, there is a question whether the waste stored less than a month could be received into and shipped out of the unit without a survey having been conducted. Please clarify if wastes were surveyed (radiological) coming into and out of the facility.

Last paragraph of the response, see number 7.

**RL/WHC RESPONSE #2: Standard practice at the Hanford Site would require Health Physics Technician (HPT) coverage for radiological surveys during any movement of material into or out of the 4843 AMSF. The HPT coverage is required because the 4843 AMSF is a radiological controlled area (RCA) containing a radiation zone. The requirement for HPT coverage (i.e., radiological survey) would apply to both radiological and non-radiological material entering or leaving the 4843 AMSF.**

ECOLOGY COMMENT #3: Regarding RL/WHC Response #1, concur with the addition of the information provided in the response to the closure plan.

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| | Regarding RL/WHC Response #2, concur with the additional explanation of the Health Physics Technician (HPT) coverage for radiological surveys during any movement of material into or out of the 4843 AMSF unit. The reviewer requests that the additional information provided by RL/WHC Response #2 also be included in the closure plan.<br><br>Regarding the second portion of RL/WHC's Response #1, the additional information provided by responses to comments number 3, 10, 12, 23, 51, 53, 73, and 81 satisfies the request of information on past operations. This portion of the comment is considered closed.<br><br>**RL/WHC RESPONSE #3: Per the discussion at the issue resolution meeting on March 24, 1994, the text of the closure plan will be revised to address the following: The radiation surveys conducted as part of the container acceptance/transfer process will used as evidence that all containers were intact and undamaged at time of arrival at the 4843 AMSF. Also, the monthly or quarterly radiation surveys will be cite a supporting evidence that there were no undocumented or uncontrolled releases while the radioactive waste was stored at the 4843 AMSF.**<br><br>**As agreed during the issue resolution meeting on March 24, 1993, RL/WHC and Ecology agree to close this comment.** | |
| 13. | ECOLOGY COMMENT #1: 4-2/1. The text states that records of laboratory analysis of waste samples are maintained at the 340 Facility and Tanker.<br><br>Was analysis conducted on spilled material to determine the composition of compounds formed? If so, provide analytical records. If not, provide a detailed discussion of how the conclusion was reached. If it cannot be substantiated that carbonates are the only product of this reaction, sampling for both hydroxides and carbonates will be required. | Closed per UMM of 9/8/93 |

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| | **RL/WHC RESPONSE #1: Analytical tests were not performed on the limited amounts of the spilled material. The closure plan will be modified to address both hydroxides and carbonates.**<br><br>ECOLOGY COMMENT #2: Concur with response to account for hydroxides and carbonates in the closure plan, but analysis will not be limited to these substances. The closure must account for wastes associated with the life and operation of the facility.<br><br>**RL/WHC RESPONSE #2: As agreed at the Unit Managers' Meeting of September 8, 1993, this comment has been closed and consolidated with Comment No. 52.** | |
| 14. | ECOLOGY COMMENT #1: 4-2/23. There is question about the actual composition of spilled waste, once reacted with its ambient environment. The text states "Carbonates are the only products considered to be produced from the reaction of the metal wastes with air." Support for this conclusion is not provided. This determination is contradicted by spill reports and later sections of the closure plan. One of the spill reports submitted with the closure plan states that Sodium Hydroxide (NaOH) was formed when the waste reacted with moisture in the atmosphere. Also, during a walk-through of the unit, it was again stated that NaOH was formed when wastes were spilled.<br><br>Discuss the chemical/physical properties that govern the outcome of the reacting. Justify not considering other potential products. Provide supporting facts, references and/or analytical records. See previous comment.<br><br>**RL/WHC RESPONSE #1: See response to Comment No. 13.**<br><br>ECOLOGY COMMENT #2: See previous comment. *[Comment No. 13]*<br><br>**RL/WHC RESPONSE #2: As agreed at the Unit Managers' Meeting of September 8, 1993, this comment has been closed and consolidated with Comment No. 52.** | Closed per UMM of 9/8/93 |

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| 15. | ECOLOGY COMMENT #1: 6-1/18. Ambiguous terms such as, "potentially dangerous" and "action levels" are not appropriately defined for the function of this document. The removal or decontamination of waste residues, equipment, soils, or other materials contaminated with dangerous waste or dangerous waste residue must not exceed background environmental levels for listed or characteristic wastes or designation limits for state only waste (WAC 173-303-610(2)(b).<br><br>Modify text to include background as the clean closure performance standard. Replace ambiguous terms, or define them in reference to the regulation cited above. Citations of health-based standards must be changed to background. Correlate the term "action level" with the clean closure requirements.<br><br>**RL/WHC RESPONSE #1: The text will be changed to remove the term potentially and insert waste to read "... dangerous waste constituents..." to remain consistent with the rest of the document. The remainder of the text will remain unchanged.**<br><br>**In a letter from Ecology (Roger Stanley) dated 2/4/92, addressed to all interested parties, three Cleanup/Remediation options were presented as acceptable options for Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response Compensation and Liability Act activities on the Hanford Site. In this letter, options in addition to cleanup to background levels were addressed. In light of this, the use of health based action levels as a standard for closure of RCRA units has been proposed on the Hanford Site and is being looked at in earnest by Ecology. Therefore, the use of the term "action levels" in closure plans has become common syntax and has up to this point been accepted by Ecology.**<br><br>**The definition of "action level" for this closure plan is given on page 6-1, lines 7-8 and also on page 6-2, line 33. The text will be modified to include the definition.**<br><br>ECOLOGY COMMENT #2: Concur with first paragraph of the response. | Closed per DQO of 5/24/95 |

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The second paragraph of the 2/23/93 response states that the definition of "action level" for this closure plan is provided on page 6-1, lines 7-8. The referenced statement reads, "these standards will be achieved by removing dangerous waste from the 4843 AMSF and decontaminating to levels protective of human health and the environment..." This statement is consistent with the closure performance standards of WAC-173-303-040. However, neither WAC 173-303-040, nor proposed WAC 173-303-610(2) (to incorporate provisions of WAC 173-340-200) provide a definition for "action level."

On page 6-2, line 33, "action level" is defined as a concentration that prompts "an action." This statement could be interpreted as being consistent with the closure performance standard statement on page 6-1, lines 7-9. Although on page 6-2, lines 34-35, the action level for the metal surfaces is defined as "the limit of quantitation of the wipe sample method." Without identifying which particular analytes or analytical methods are to be utilized, the limit of quantitation cannot be established. Similarly, on page 6-2, lines 35-44, the action level for the concrete floor is proposed to be based on WAC 173-303-084, "Dangerous Waste Mixtures." Again, without including all applicable parameters and not identifying the corresponding analytical methods, appropriate "action levels" cannot be established. To avoid any further confusion on this subject, delete all "action level" references and phrases. It is recommended that after the waste characteristics of Chapter 4.0 are properly identified, the sampling and verification parameters and the analytical methods be re-evaluated and revised as appropriate. In addition, for simplicity, it is requested that a table be inserted into the plan which identifies parameters/analytes, detection levels, practical quantification levels, and corresponding analytical methods that the various medias will be sampled for. Another table to address analyte specific "cleanup levels" (as defined by WAC 173-340-200) for the various media should be considered for inclusion, if applicable.

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**COMMENT CONSOLIDATION: As agreed at the Unit Managers' Meeting of September 8, 1993, the following comments have been closed and consolidated with Comment No. 15: No. 23 (6-1/13), No. 24 (6-2/11), and No. 25 (6-2/33-35).**

**RL/WHC RESPONSE #2: The term 'action levels' will continue to be used in this and all other closure plans. The definition of 'action level' is the concentration of contaminate that requires cleanup activity when that concentration is greater than some predetermined level (e.g., site-wide background, health-based level, or the limit of quantitation.) This definition will be included in the closure plan where appropriate.**

**A table will be added to Section 7 that identifies constituents, parameters, and analytical method for specific media (e.g., concrete). Also, a table will be added that identifies the constituents of concerns and the respective action level.**

ECOLOGY COMMENT #3: Although the term "action level" is now proposed (by NOD Response Table dated October 14, 1993) to be defined as "the concentration of contaminate that requires cleanup activity when that concentration is greater than some predetermined level," the term is not defined by WAC 173-303. Furthermore, it is the reviewer's understanding that the term "action levels" only occurs once within the rule (WAC 173-340-400(4)(c)(xi)) with regard to cleanup actions. It is also the reviewer's understanding that for purposes of conducting a RCRA closure through WAC 173-303-610, MTCA "cleanup standards" (of Part VII of the MTCA Rule) are to be utilized rather than the MTCA "cleanup process." As the closure plan addresses a RCRA unit, and to avoid further confusion on this subject, delete the "action level" phrase and definition. It should be noted that a definition for "cleanup level" is provided by WAC 173-340-200 which may be utilized by reference of proposed WAC 173-303-610 (promulgated in January 1994 to amend WAC 173-303-610 to include WAC 173-340-200).

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| | **RL/WHC RESPONSE #3: Since the issuance of this NOD, applicable environmental regulations have changed so that "action levels" in an appropriate term to be used in this situation and will be used as defined in the closure plan.**<br><br>(Note: As of May 24, 1995, due to the outcome of the DQO no sampling for closure determination will be performed; therefore it is not necessary to create a table containing information on sampling constituents, parameters, or analytical methods.) | |
| 16. | ECOLOGY COMMENT #1: 6-1/22. The text states that no post closure activities are expected. No discussion is provided to support this decision.<br><br>Elaborate on why post closure will not be necessary, and explain standards used in the determination.<br><br>**RL/WHC RESPONSE #1: The text will be modified to state that the 4843 AMSF is expected to be clean closed. Therefore, no post closure activities are expected.**<br><br>ECOLOGY COMMENT #2: Concur. | Closed by Ecology NOD Response Table of 7/20/93 |
| 17. | ECOLOGY COMMENT #1: 6-1/26-30. Again, explain why carbonates are considered the only possible reaction products.<br><br>See comment number 14.<br><br>**RL/WHC RESPONSE #1: See response to Comment No. 13.**<br><br>ECOLOGY COMMENT #2: Concur.<br><br>In response to second paragraph of response, see comment number 13. | Closed per UMM of 9/8/93 |

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| | **RL/WHC RESPONSE #2: As agreed at the Unit Managers' Meeting of September 8, 1993, this comment has been closed and consolidated with Comment No. 52.** | |
| 18. | ECOLOGY COMMENT #1: 6-1(*sic*)/34. [6-2/34.] The sentence reads, "[t]he action level of the metal surfaces (walls) is the limit of quantitation of the wipe sample method".<br><br>First, provide reference or detailed description of sample method used. Second, define the "quantitation limit" and state what it is for specific analytes. Action levels must be adequately defined.<br><br>**RL/WHC RESPONSE #1: The reference for the sample method is *A Compendium of Superfund Field Operation Methods* (EPA/540/P-87/001). A description of the method is contained in Section 7.3.2. Since wipe sampling only provides a qualitative estimate of contamination, the text is in error and will be changed.**<br><br>ECOLOGY COMMENT #2: Concur.<br><br>**(Note: As of May 24, 1995, due to the outcome of the DQO process and changes in closure strategy this section of the closure plan has been deleted.)** | Closed by Ecology NOD Response Table of 7/20/93 |
| 19. | ECOLOGY COMMENT #1: 6-1/35-36. The closure plan does not describe methods employed for removing contaminants from the unit.<br><br>Provide a detailed description of procedures utilized to remove contaminants. Be explicit.<br><br>**RL/WHC RESPONSE #1: The intent of Section 6 is to provide the general outline for closure. More detailed information is not appropriate. Section 7.4 of the closure plan, "Decontamination and Disposal of Building and Concrete Pad," discusses the decontamination strategy for clean closure.** | Closed by Ecology NOD Response Table of 7/20/93 |

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| | ECOLOGY COMMENT #2: Concur. | |
| 20. | ECOLOGY COMMENT #1: 6-1/37. This sentence refers to Appendix D.<br><br>See comment number 14.<br><br>**RL/WHC RESPONSE #1: See response to Comment No. 13.**<br><br>ECOLOGY COMMENT #2: Concur.<br><br>In response to second paragraph of response, see comment number 13.<br><br>**RL/WHC RESPONSE #2: As agreed at the Unit Managers' Meeting of September 8, 1993, this comment has been closed and consolidated with Comment No. 52.** | Closed per UMM of 9/8/93 |
| 21. | ECOLOGY COMMENT #1: 6-1/40-46. Because wastes were externally stored, sampling and analysis outside the unit will be required.<br><br>Modify text accordingly.<br><br>**RL/WHC RESPONSE #1: See response to Comment No. 3.**<br><br>ECOLOGY COMMENT #2: See RL/WHC response to comment 5. The closure plan states that the boundary of the unit is ten feet from the exterior walls of the building. Therefore, soil sampling within this boundary is appropriate. Modify text accordingly.<br><br>**RL/WHC RESPONSE #2: As agreed at the Unit Managers' Meeting of September 8, 1993, this comment has been closed and consolidated with Comment No. 3.** | Closed per UMM of 9/8/93 |

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| 22. | ECOLOGY COMMENT #1: 6-2/7-10. The detail of this section is insufficient.<br><br>Explain how and where the waste will be removed. Describe or reference sampling, analysis, and decontamination procedures.<br><br>**RL/WHC RESPONSE #1: The radioactive mixed waste will be moved to the Hanford Mixed Waste Complex for long-term storage. The radioactive mixed waste will remain at the Hanford Site in the 200 West area for the present time. The dangerous waste has been transferred offsite to a licensed hazardous waste facility for disposal.**<br><br>**Relative to the details of decontamination, see response to Comment No. 19.**<br><br>**The contents of Section 6.2 is considered to be adequate and will not be changed.**<br><br>ECOLOGY COMMENT #2: The information provided in this response is not contained in the closure plan. Modify text to incorporate information into appropriate sections of the plan. It should be noted that the comment pertains to wastes generated during closure activities and the response addressed wastes in storage.<br><br>**RL/WHC RESPONSE #2: The purpose of Section 6 of the closure plan is to outline the closure strategy and performance standards. The detailed information being requested in both Ecology comments is appropriate in either Section 7 or in the Decommissioning Work Plan. It is not consistent with the current closure plan format to include that level of detail in Section 6. As part of Revision 1 of the closure plan, Section 6 will be modified to bring it up to current standards of information, but it will not contain detailed methodology. That information is covered in Section 7 and in the Decommissioning Work Plan.** | Closed per Issue Resolution Meeting 3/23/94 |

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| | ECOLOGY COMMENT #3: Concur with including the requested information in Section 7 and in the Decommissioning Work Plan. It should be noted that it is the reviewer's understanding that the Decommissioning Work Plan provides detailed descriptions of procedures while Section 7 of the closure plan includes closure criteria from which the Decommissioning Work Plan is based upon and subsequently written. It is also the reviewer's understanding that the Decommissioning Work Plan will be added either to the 4843 AMSF administrative record or to the closure plan as an appendix.<br><br>**RL/WHC RESPONSE: Per the discussion at the issue resolution meeting on March 24, 1994, the reviewer's understanding of the Decommissioning Work Plan is correct.**<br><br>**As agreed during the issue resolution meeting on March 24, 1993, RL/WHC and Ecology agree to close this comment. All parties recognize that the DQO process may modify any commitments made in these NOD responses.**<br><br>**(Note: As of May 24, 1995, due to the outcome of the DQO process a Decommissioning Work Plan is not necessary and will not be prepared; all closure activities will be documented in Chapter 7 of the closure plan.)** | |
| 23. | ECOLOGY COMMENT #1: 6-1/13. Decontamination of building equipment below action levels is specified as the second step in the closure activities.<br><br>The first comment associated with these activities evolved out of a tour of the unit on October 5, 1992. During the tour, loading/unloading practices were discussed. It was stated that a forklift was used to move pallets of waste drums, however, the lift was not present during the tour. Provide a list of equipment utilized in the operation or closure of the unit in the closure plan, and a detailed discussion of decontamination or disposal of equipment associated with the unit. | Closed per UMM of 9/8/93 |

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Again, "action levels" are not adequately defined and therefore are not appropriate for the closure plan. See comment *[No. 15]* regarding 6-1/18.

**RL/WHC RESPONSE #1: No forklifts are dedicated for use at or stored in this unit. Due to the containerized nature of the waste that was stored in this unit, any forklifts or other equipment used in this unit would only become contaminated in the event of a release or spill of waste. Neither of the releases of waste occurring in the 4843 AMSF involved forklifts, other equipment, or load/unloading operation. Because no material handling equipment was considered to be part of the unit, such equipment is not addressed by the closure plan.**

**See the response to Comment No. 15 for "action levels."**

ECOLOGY COMMENT #2: Concur with first paragraph of response.

See number 15 to address second paragraph of response.

**RL/WHC RESPONSE #2: As agreed at the Unit Managers' Meeting of September 8, 1993, this comment has been closed and consolidated with Comment No. 15.**

24. ECOLOGY COMMENT #1: 6-2/11. Action levels are not adequately defined. See comment number 14. — Closed per UMM of 9/8/93

**RL/WHC RESPONSE #1: See response to Comment No. 15.**

ECOLOGY COMMENT #2: See number 15.

**RL/WHC RESPONSE #2: As agreed at the Unit Managers' Meeting of September 8, 1993, this comment has been closed and consolidated with Comment No. 15.**

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| 25. | ECOLOGY COMMENT #1: 6-2/33-35. Action levels are not adequately defined. Compliance with regulatory requirements is not discussed, nor is the wipe sample method appropriately defined, referenced or adequately explained.<br><br>See comment regarding 14.<br><br>**RL/WHC RESPONSE #1: For action levels, please see Comment Response No. 15. The wipe sample method is referenced in Section 7.3.2.**<br><br>ECOLOGY COMMENT #2: See number 15.<br><br>**RL/WHC RESPONSE #2: As agreed at the Unit Managers' Meeting of September 8, 1993, this comment has been closed and consolidated with Comment No. 15.** | Closed per UMM of 9/8/93 |
| 26. | ECOLOGY COMMENT #1: 6-2/35-39. The intent of this sentence is unclear. Is it that the concrete floor is being considered a component of the mixture for designation purposes?<br><br>The floor cannot be considered a component of the waste unless it is intended to remove the entire floor and dispose of it as dangerous waste. It appears the floor is not intended to be waste, therefore it can not be considered when designating the concentration of the waste. See WAC 173-303 for designation procedures. The mixture rule does not apply to the concrete floor. Refer to WAC 173-303-610 for decontamination guidance.<br><br>Any sodium hydroxide or carbonate embedded in the floor needs to be sampled and compared with the background concentration in the clean concrete it is adhered to.<br><br>**RL/WHC RESPONSE #1: The floor is not being considered a component of the mixture for designation purposes. The text will be modified to clarify this point.** | Closed per DQO of 5/24/95 |

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**Sampling concrete to determine background levels has not been feasible due to the variability in the composition of concrete from the chemical constituents in the aggregate, additives, and cement. The Toxic Characteristic Leachate Procedure (TCLP) will be used for inorganic analysis. This method is most likely to dissolve only those constituents that could mobilize in a landfill environment without dissolving the concrete itself. The justification for using TCLP for inorganic analysis in concrete is attached to the NOD response table.**

ECOLOGY COMMENT #2: Concur with first paragraph of response.

Addressing the second paragraph of the response, the discussion of concrete composition variability as presented in the attachment to the 2/23/93 response table is accepted as valid. The proposal to utilize the Toxic Characteristic Leachate Procedure (TCLP) solely as a measure of decontamination verification is inappropriate. The purpose of the TCLP as it occurs in WAC 173-303-090 is to determine if the waste is dangerous waste by the characteristic of toxicity after it has been determined, not to be designated as a dangerous waste under any of the dangerous waste lists identified by WAC 173-303-090(8)(b). It should be noted that contaminants can be detected several magnitudes above background and may not leach using the TCLP. For this reason, these concentrations, if left in the environment, may be deleterious to the environment or human health. Therefore, the proposal to utilize TCLP for decontamination verification in the second paragraph of the response table cannot be approved.

Addressing clean closure verification in regard to the concrete, several sampling approaches should be considered. The establishment of background for the concrete taking the variables as identified in the discussion of concrete composition variability, as presented in the attachment to the February 23, 1993 response table, into consideration is the approach as specified by WAC 173-303-610. If this approach is deemed not to be feasible, a combination of analytical methods whereby total metals analysis (using the hot acid leach method), TCLP analysis, and rat and fish bioassays are conducted and evaluated,

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should be considered. Another approach to be considered is that of utilizing cleanup levels established by proposed WAC 173-303-610 (scheduled to be promulgated in December 1993 to amend WAC 173-303-610 to include WAC 173-340-200) whereby those cleanup levels specified in proposed WAC 173-340-740 for soils may be applied to concrete. Revision 1 of the closure plan should identify exactly which standards are to be utilized.

**RL/WHC RESPONSE #2: The current intention is to use the step-wise Hot Acid Leach-Total Metals Analysis/Toxic Characteristic Leaching Procedure/Rat and Fish Bioassay Methodology for the analysis of inorganics in concrete. This methodology was presented by Ecology at the Unit Managers' Meeting on February 10, 1993, for the *303-K Radioactive Mixed Waste Storage Facility Closure Plan*. The methodology was identified by Ecology as the state-wide standard methodology for inorganics in concrete.**

**The closure plan will be modified to incorporate the previously stated methodology where appropriate.**

ECOLOGY COMMENT #3: In response to the proposal (NOD Response Table dated October 14, 1993), to utilize a step-wise Hot Acid Leach - Total Metals Analysis/Toxic Characteristic Leaching Procedure/Rat and Fish Bioassay Methodology for the analysis of inorganics in concrete, the reviewer has attempted to better understand the referenced methodology. In so doing, the reviewer reviewed the Unit Manager meeting minutes of the February 10, 1993, meeting regarding 303-K Radioactive Mixed Waste Storage Facility and the applicable portions of "303-K Storage Facility Closure Plan," (DOE/RL-90-04 Revision 2). As the October 14, 1993, response does not include sufficient detail to identify procedural steps and criteria by which to make a decontamination determination, the following questions/concerns were generated.

From the February 10, 1993 Unit Manager meeting minutes for the 303-K Radioactive Mixed Waste Storage Facility, it is indicated that the total metal

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analysis using hot acid leach will be the initial step. It is also stated that "[I]f any species exceed 20 times the TCLP detection limit, then TCLP is required." The reviewer does not understand the purpose of utilizing the TCLP detection limit rather than the TCLP regulatory limit. It is the reviewer's understanding that during the initial steps of the TCLP procedure, the solid phase of the sample material is extracted at a 20 to 1 ratio, therefore, as a screening approach (for designation purposes), if the total metals analysis does not yield values which exceed 20 times the TCLP regulatory limits, the material is unlikely to "fail" the TCLP test. Please clarify what criteria/values the total metals would be compared to (detection limits or regulatory limits). It should be noted that the constituents of concern (alkali metals, alkali carbonates, or alkali hydroxides) do not have TCLP regulatory limits. In addition, in the same meeting minutes, it is stated that "this procedure is used statewide for designation of concrete." It should be noted that the goal during closure is to confirm decontamination and that "designation of concrete" does not achieve the desired confirmation. Therefore, it is requested that an explanation of the utilization of the TCLP procedure, if applicable, be provided. In addition, if the TCLP procedure is to be utilized, an identification of which portions of the TCLP method will be utilized/followed.

As requested in Ecology's July 20, 1993 response table, several approaches should be considered when addressing clean closure verification in regard to the concrete. For purposes of resolving this deficiency, an identification of procedures is requested. It should be noted that Ecology's draft "Guidance for Clean Closure of Dangerous Waste Facilities" (April 1993), states "[T]he cleanup levels specified in WAC 173-340-740 for soils may be applied to concrete; however, the facility proponent may prefer to conduct individual risk assessments on concrete structures that will be left in place after closure." It is proposed that the identification of procedures be deferred to the DQO process during which it is hoped that an agreement may be reached on sampling logic and objectives. Should the deficiency be resolved during the DQO process, this comment is considered closed by deferral.

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| | **RL/WHC RESPONSE #3: This NOD is no longer a concern due to a change of sampling strategy. During a DQO session, a new sampling strategy has been agreed to by all interested parties; there will be no sampling of the concrete.** | |
| 27. | ECOLOGY COMMENT #1: 7-3. Section 7.3.3 describes procedures for taking concrete samples of the floor, but does not address the rubber seams in the floor. Seams and joints in an old facility provide a pathway to the environment. They should be treated in a similar manner for sampling. No discussion of other potentially contaminated items is provided.<br><br>The plan must identify the equipment or structures that will require decontaminating at closure, including floors and walls of the building, unit. parking lots, roads, truck staging areas, structures associated with the unit, and trucks and heavy equipment, such as forklifts. Provide additional sampling, similar to that being done for cracks, or provide detailed justification for the proposed sampling method.<br><br>**RL/WHC RESPONSE #1: Construction drawing FSK-70E-164 located in Appendix B identifies the cracks in the concrete under note 3 to be constructed to the following parameters:**<br><br>**"Saw cut 1/8 inch wide X 3/4 inch deep or keyed construction joints"**<br><br>**Whether they are constructed joints, or as a result of keying (which would have been accomplished by laying small wooden or metallic keys after pouring and then removing the keys after a short period of curing). The joints, when constructed, did not penetrate the foundation slab completely. These joints do not provide a pathway to the environment since the concrete thickness is a minimum of 6 inches. The opportunity for any waste to reach these is nonexistent since no free liquids have been stored in the unit and all spills are reported as having involved solids as is noted in Appendix D. No text change required.** | Closed per Issue Resolution Meeting of 3/34/94 |

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**The 4848 Building as described in the closure plan is the only structure potentially requiring decontamination. Any other structures, equipment, or physical plant (i.e., roads, staging areas, etc.) is beyond the scope of the 4843 AMSF Closure Plan.**

**As discussed in the response to Comment No. 3, the waste material that was stored in the 4843 AMSF was a solid reactive material stored in sealed containers. Only two minor releases of solid (i.e., non-liquid) waste by-products have occurred. No free liquids were present in this unit. Because of these factors, the seams in the concrete floor are not considered to be likely pathways for contamination.**

ECOLOGY COMMENT #2: The purpose of a saw-cut or a strip of material embedded in a concrete slab is to create a relief joint. Relief joints are used to control cracking in concrete by creating a fault line for the cracks to follow. They do not in any way prevent cracking or prevent complete penetration of cracks. Therefore, revise text accordingly.

**COMMENT CONSOLIDATION: As agreed at the Unit Managers' Meeting of September 8, 1993, the following comments have been closed and consolidated with Comment No. 27: No. 78 (2-2/33-35 and 7-3/44-46) and No. 79 (7.3.3).**

**RL/WHC RESPONSE #2: Efforts will be made to identify the joint type and the appropriate descriptions will be included in the text replacing the descriptions on page 2-2, lines 33 to 35 and page 7-3, lines 44 to 46. The changes will include discussion on any cracks in the joints.**

ECOLOGY COMMENT #3: Regarding RL/WHC's Response #1, the response does not concur with the existence of a pathway to the environment via jointing cracks. Therefore, the response does not address Ecology's comment #1. The reviewer proposes to defer this issue to the DQO during which it is hoped that an agreement may be reached on sampling logic and objectives. Should the

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| | deficiency be resolved during the DQO process, this portion of the comment is considered closed by deferral.<br><br>Regarding RL/WHC Response #2, concur with the inclusion within the closure plan of discussion on any cracks in the joints.<br><br>**RL/WHC RESPONSE #3: Per the discussion at the issue resolution meeting on March 24, 1994, the main issue is that the cracks in the concrete needed to be addressed by the closure plan, not the details on sampling. Since the revised closure plan will address the cracks in the concrete, this comment can be closed.**<br><br>**As agreed during the issue resolution meeting on March 24, 1993, RL/WHC and Ecology agree to close this comment. All parties recognize that the DQO process may modify any commitments made in these NOD responses.**<br><br>**(Note: As of May 24, 1995, due to the DQO process no sampling of the concrete floor will be performed.)** | |
| 28. | ECOLOGY COMMENT #1: 7-3/9. Because not all of the waste was mixed waste, using radiation surveys to determine locations to collect samples is not sufficient verification, nor is limiting sampling to rusted or stained areas.<br><br>Samples will need to be collected and analyzed that will depict the condition of the entire facility.<br><br>**RL/WHC RESPONSE #1: As discussed in the responses to Comments Nos. 3 and 27, all the waste material consisted of solid materials stored in sealed containers, no free liquids were present, and neither spill of solid material contaminated the walls.**<br><br>**Due to the nature of the waste stored in the 4843 AMSF, radiation surveys and** | Closed per DQO of 5/24/95 |

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visual inspection of the surfaces are considered ample to identify those points where contamination is the most likely to be present. The wastes stored in this unit are characteristic wastes. If they ever came into contact with any part of the unit, a trace of either the radioactivity (if the waste was mixed) or the reactive or corrosive nature of the waste would pinpoint its location (i.e., discoloration or corrosion of the surface). Therefore, the use of radiation surveys and visual inspection of the unit interior is judged adequate for determining sampling location. The use of visual inspections for selection of sample points was the primary method used for the closure of the 2727-S Facility, a similar unit.

Because of the nature of waste storage and handling, contamination of the walls is considered to be unlikely. For the type of waste stored in this unit, the wall sampling as described in the closure plan is adequate.

ECOLOGY COMMENT #2: It is appropriate to use bias sampling (visual inspection and radiation survey) to locate suspect contamination within a unit. But it is not adequate to limit sampling to these areas for clean closure verification. Even though contamination of the walls is unlikely, it is not impossible. Therefore, random sampling of the walls will be required. Also, during a July 9, 1993 site visit, the insulation covered wall located above the sheet metal was noted to be torn/ruptured in many places. As drums were stacked three drums high, it is appropriate to verify clean closure of the walls above the sheet metal. The closure plan addresses only the sheet metal and should also include a description of how decontamination verification samples above the sheet metal will be collected.

Addressing the second comment of the response, the request is inconsistent with what was allowed in the 2727-S Facility closure. It should be noted that at this time, the referenced unit is known to have very little in common with the 4843 AMSF storage unit. During closure activities, if it is found that 4843 AMSF presents similar challenges to those of 2727-S, the additional information

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will be evaluated accordingly. Otherwise, biased and random sampling will be utilized. It is unfortunate that all units are not able to be managed consistently. Due to the unique nuances of each unit, and the perspective of the unit manager, it is a fallacy to assume that blanket site wide approval has been provided because a procedure, interpretation, or guidance has been provided by one regulator at one unit. Furthermore, during a project manager's meeting, it was decided that what is done at one unit may not appropriately be implemented at another unit. In other words, the actions taken at one unit do not set a precedent for all other *RCRA* units.

**RL/WHC RESPONSE #2: As discussed previously, there is no reasonable pathway for either alkali metal waste or its by-products to contaminate the walls. These are solid pyrophoric metals in sealed containers. It is not possible for the alkali metal to 'escape' from the containers without their visible corrosion by-products or metal fire occurring. For these reasons, wipe sampling of the metal wall surfaces only is adequate.**

ECOLOGY COMMENT #3: It is appropriate to use bias sampling (visual inspection and radiation survey) to locate suspect contamination within a unit. But it is not adequate to limit sampling to these areas for clean closure verification. Even though contamination of the walls is unlikely, it is not impossible. Therefore, random sampling of the walls will be required. Also, during a July 9, 1993, site visit, the insulation covered wall located above the sheet metal was noted to be torn/ruptured in many places. As drums were stacked three drums high, it is appropriate to verify clean closure of the walls above the sheet metal. The closure plan addresses only the sheet metal and should also include a description of how decontamination verification samples above the sheet metal will be collected.

Regarding RL/WHC's Response #2, the reviewer proposes that the decontamination verification of the insulation covered wall located above the sheet metal be deferred to the DQO process during which it is hoped that an agreement may be

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| | reached on sampling logic objectives. Should the deficiency be resolved during the DQO process, this comment is considered closed by deferral.<br><br>**COMMENT CONSOLIDATION: As agreed at the issue resolution meeting of March 24, 1994, the following comment has been closed and consolidated with Comment No. 28: No. 86 (Additional section).**<br><br>**RL/WHC RESPONSE #3: Due to a change in sampling strategy this NOD does not apply. As agreed to with Ecology through the DQO process there will be no sampling of the walls, insulation, or concrete.** | |
| 29. | ECOLOGY COMMENT #1: 7-3/46. The text states that the unit is divided by a rope into two storage areas, but section 3.0 indicates that Na/K product was stored in the facility.<br><br>Discuss the dual function of the unit. See comment number 10.<br><br>**RL/WHC RESPONSE #1: See response to Comment No. 10.**<br><br>ECOLOGY COMMENT #2: See comment number 10.<br><br>**RL/WHC RESPONSE #2: As agreed at the Unit Managers' Meeting of September 8, 1993, this comment has been closed and consolidated with Comment No. 10.** | Closed per UMM of 9/8/93 |
| 30. | ECOLOGY COMMENT #1: 7-4/1. See comment number 14.<br><br>**RL/WHC RESPONSE #1: See response to Comment No. 13.**<br><br>ECOLOGY COMMENT #2: See comment number 13.<br><br>**RL/WHC RESPONSE #2: As agreed at the Unit Managers' Meeting of September 8, 1993, this comment has been closed and consolidated with Comment No. 52.** | Closed per UMM of 9/8/93 |

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| 31. | ECOLOGY COMMENT #1: 7-4/9. Many distinct procedures are compiled into SW-846. Specific procedures used should be referenced by number, and any alteration of procedures require prior regulatory approval.<br><br>Specifically describe "the protocol" used. It is suggested that a grid pattern of the unit, inside and out, be implemented for sampling utilizing both stratified random and biased sampling methods.<br><br>**RL/WHC RESPONSE #1: A reference to Appendix G will be added to identify the SW-846 protocols being used.**<br><br>**The sampling for the floor of the building is considered to be adequate and is discussed in Figure 7-2 on page F7-2 and in Table 7-1 on page T7-1.**<br><br>**For soil sampling, see the response to Comment No. 3.**<br><br>**Clarification is requested on the definition of "stratified random" sampling.**<br><br>ECOLOGY COMMENT #2: Concur with the addition of a reference to appendix G to identify SW-846 protocols being used.<br><br>Specify why the number of samples (seven) proposed for the floor sampling is considered adequate. Has the number been based on a statistical goal to achieve a particular confidence interval?<br><br>Stratified sampling consists of taking samples at various depths/distances or geographical locations.<br><br>**COMMENT CONSOLIDATION: As agreed at the Unit Managers' Meeting of September 8, 1993, the following comment has been closed and consolidated with Comment No. 31: No. 42 (F7-2).** | Closed per DQO of 5/24/95 |

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| | **RL/WHC RESPONSE #2: For sampling purposes, the floor surface is divided into 1 $m^2$ grids. For 4843 AMSF, there are 144 squares in a 12 by 12 pattern (see Figure F7-2, page F7-2). To obtain representative and statistically significant samples, 5 percent of the grids must be sampled. This results in sampling of 7 grids (144 x 0.05). The 5 percent area requirements is a standard number for sampling flat surfaces and is based on U.S. Environmental Protection Agency (EPA) guidelines. The text of the closure plan will be modified to identify that the 7 samples represent 5% of the surface area.** | |
| | ECOLOGY COMMENT #3: Concur with the addition of a reference to appendix G to identify SW-846 protocols being used. | |
| | Specify why the number of samples (seven) proposed for the floor sampling is considered adequate. Has the number been based on a statistical goal to achieve a particular confidence interval? | |
| | Regarding RL/WHC's Response #2, the particular reference for the U.S. Environmental Protection Agency (EPA) guidelines is requested to be identified. In addition, an identification of the statistical confidence level to be achieved by the proposed number of samples is requested. | |
| | **RL/WHC RESPONSE #3: No sampling for closure determinations will occur at 4843; therefore this NOD is no longer a concern.** | |
| 32. | ECOLOGY COMMENT #1: 7-4/14-31. See comment number 26. | **Closed per Issue Resolution Meeting of 3/24/94** |
| | **RL/WHC RESPONSE #1: See response to Comment No. 26.** | |
| | ECOLOGY COMMENT #2: Please indicate, in response, that text of page 7-4, lines 14-31, will be modified to delete references to WAC 173-303-084 for decontamination verification of the concrete. | |

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**RL/WHC RESPONSE #2:** The text on page 7-4, lines 11 to 31 reading "Unlike the metal walls, the possibility...in accordance to WAC 173-303-084(5)(b)." will be deleted. A complete rewrite of the section will be substituted. A draft of the rewrite is provided as follows:

> "Unlike the metal walls, the possibility exists that contaminants have penetrated and embedded in the concrete floor. Therefore, verification is necessary to ensure that any contaminants embedded in the floor are below the action levels presented in Table *to be determined (TBD)*.
>
> To obtain statistically significant and representative samples, 5% of the surface area of the floor need to be sampled. This requires 7 of the grids shown in Figure 7-2 to be sampled. The 7 concrete floor samples will be taken from the locations identified in Figure 7-2. These locations are selected by the results of random number generation (Table 7-1). These samples will be taken by concrete chipping.
>
> Authoritative concrete samples will be taken of the cracks in the concrete floor as shown in Figure TBD. These samples will be taken by concrete coring.
>
> The concrete samples collected will be analyzed for the contaminants identified in Table TBD. These inorganic contaminants will be analyzed using the Hot Acid Digestion-Toxic Metals/Toxic Characteristic Leaching Procedure methodology, as shown in Table TBD."

ECOLOGY COMMENT #3: Concur with deletion of lines 11 to 31 on page 7-4.

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The reviewer requests that the concurrence with the proposed rewrite of this section be deferred to the DQO process, due to the concerns as identified in comment number 26. Prior to beginning the DQO process, it should be noted that the reviewer concurs with the proposed authoritative concrete sampling, an evaluation of applicable inorganic contaminants, and concrete chipping.

Please see comment number 15 regarding the usage of the term "action levels."

**RL/WHC RESPONSE #3: As discussed in the issue resolution meeting of March 24, 1994, the text in RL/WHC Response #2 will not be used as is since it contains several unresolved issued. The unresolved issue will be address by other comments. (E.g., use of TCLP, see Comment No. 26; number of samples, see Comment No. 31; use of the term 'action levels,' see comment No. 15).**

**The table that identifies the constituents of concerns and the appropriate analytical parameters will be included in the revised closure plan. The final content of both the table and the text will be based upon the results of the DQO process.**

**As agreed during the issue resolution meeting on March 24, 1993, RL/WHC and Ecology agree to close this comment.**

**(Note: As of May 24, 1995, due to the DQO process no closure determination sampling will be performed.)**

33. ECOLOGY COMMENT #1: 7-4/50. Laboratory procedures are cited in this sentence. — Closed by Ecology NOD Response Table of 7/20/93

Specify that the current version of referenced material will be used.

**RL/WHC RESPONSE #1: The Quality Assurance Project Plan (Appendix G) requires that the most current version of all Environmental Investigation and Instructions are to be used. The text will be modified so that the current version of the referenced material will be used.**

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| | ECOLOGY COMMENT #2: Concur.<br><br>**(Note: As of May 24, 1995, due to the outcome of the DQO process and changes in closure strategy this section of the closure plan has been deleted.)** | |
| 34. | ECOLOGY COMMENT #1: 7-5/40-48. This section is ambiguous.<br><br>Elaborate on the actual procedures or simply reference the procedures and submit a copy of the QA/QC manual with the closure plan for review and approval.<br><br>**RL/WHC RESPONSE #1: The analytical laboratory quality control/quality assurance (QA/QC) procedures are beyond the scope of this closure plan and will not be provided. Regulatory review and oversight of the analytical procedures are covered in the Hanford Federal Facility Agreement and Consent Order (Article XXX). For information relative to this closure plan, see the quality assurance program plan (QAPP) in Appendix G.**<br><br>**The selection of an analytical lab is not undertaken until shortly before sampling begins; in general, the lab can be expected to follow the QA/QC outline of SW-846 for RCRA analysis.**<br><br>ECOLOGY COMMENT #2: Concur with inclusion of provision to submit laboratory certification that SW-846 laboratory QA/QC procedures were utilized.<br><br>**RL/WHC RESPONSE #2: Such a provision is not required and will not be added. As stated, laboratory certifications are covered in the *Hanford Federal Facility Agreement and Consent Order* and are outside of the scope of the closure plan.**<br><br>ECOLOGY COMMENT #3: Concur. As the text identifies that the QA/QC "program will met the criteria of SW-846," and the mechanism exists to verify this through the Hanford Federal Facility Agreement and Consent Order (Article XXX), this comment is considered closed. | Closed per Ecology NOD Response Table of 2/28/94 |

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| | **(Note: As of May 24, 1995, due to the outcome of the DQO process no sampling for closure determination is required.)** | |
| 35. | ECOLOGY COMMENT #1: 7-6/7. It is unclear if an EII is being referenced.<br><br>Clarify whether the exact EII method will be used (i.e. incorporate method by reference) or whether the method is only similar to an EII, in this case.<br><br>**RL/WHC RESPONSE #1: This sentence is clearly referencing the EII. Modification of the sentence is not considered necessary.**<br><br>ECOLOGY COMMENT #2: It is suggested that "in accordance with EII .." be inserted into the sentence.<br><br>**RL/WHC RESPONSE #2: The text will be modified.** | Close per Issue Resolution Meeting of 3/24/94 |
| 36. | ECOLOGY COMMENT #1: 7-6/27-31. It is not clear who is responsible for reviewing and evaluating the reports.<br><br>Specify to whom the reports will be submitted.<br><br>**RL/WHC RESPONSE #1: The text will be modified to identify that the Field Team Leader and the Hanford Technical Lead are responsible for this reporting.**<br><br>ECOLOGY COMMENT #2: Concur. | Closed by Ecology NOD Response Table of 7/20/93 |
| 37. | ECOLOGY COMMENT #1: 7-7/33-34. It is premature to assume that sampling will be limited to the media specified. Because waste has been stored outside the unit, soil sampling will be required.<br><br>Provide procedures for soil sampling and analysis. | Closed per UMM of 9/8/93 |

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| | **RL/WHC RESPONSE #1: See response to Comment No. 3.** | |
| | ECOLOGY COMMENT #2: See comment number 3 and number 5. | |
| | **RL/WHC RESPONSE #2: As agreed at the Unit Managers' Meeting of September 8, 1993, this comment has been closed and consolidated with Comment No. 3.** | |
| | **(Note: As of May 24, 1995, due to the outcome of the DQO process and changes in closure strategy this section of the closure plan has been deleted.)** | |
| 38. | ECOLOGY COMMENT #1: 7-7/33. Soil sampling will need to be integrated into the sampling and analysis. See comments number 3 and 5. | Closed per UMM of 9/8/93 |
| | **RL/WHC RESPONSE #1: See response to Comments Nos. 3 and 5.** | |
| | ECOLOGY COMMENT #2: See comment number 3 and number 5. | |
| | **RL/WHC RESPONSE #2: As agreed at the Unit Managers' Meeting of September 8, 1993, this comment has been closed and consolidated with Comment No. 3.** | |
| | **(Note: As of May 24, 1995, due to the outcome of the DQO process no sampling for closure determination will be performed.)** | |
| 39. | ECOLOGY COMMENT #1: 7-9/3-24. The contents of section 7.4 are inadequate. The decommissioning work plan must be submitted to allow the procedure to be evaluated as part of the closure. | Closed per DQO of 5/24/95 |
| | **RL/WHC RESPONSE #1: The work plan will be written just prior to the start of decontamination operations. A copy of the decommissioning work plan will be provided on an information only basis to Ecology. The decommissioning work plan will specify the details for field implementation of the closure activities described in Section 7.0.** | |

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**After reviewing Section 7.4, it has been determined that this section will be rewritten and expanded.**

ECOLOGY COMMENT #2: The work plan will need to be incorporated into the closure plan.

The "decommissioning work plan" procedures as referenced on page 7-9, Section 7.4, are required to be detailed within the closure plan. Again, as the document is a stand alone document, the inclusion of a description of decontamination procedures within the closure plan is required by WAC-173-303-610(3)(v). In addition, the Washington State Department of Ecology's "Guidance for Clean Closure of Dangerous Waste Facilities" (Draft) dated April 1993 recommends that at the start of closure, all surface areas be visually inspected for cracks and other openings through which washing fluid may reach the environment. The guidance recommends that all identified cracks or openings be sealed with a sealant resistant to both water and any cleanser designated for use in the area. During a July 9, 1993 site visit, it was noted that the unit does not have a containment system. The decommissioning work plan procedures should identify what provisions will be made to prevent washing fluid, sandblasting sand, etc., from reaching the environment.

Concur with the revision of Section 7.4.

**RL/WHC RESPONSE #2: Additional detail will be added to Section 7 and Section 7.4 in particular. The Decommissioning Work Plan will be written prior to the start of decontamination operations and will be issued separately from the closure plan. A copy of the Decommissioning Work Plan will be provided to Ecology on an information-only basis. The Decommissioning Work Plan will specify the details for field implementation of the closure activities described in Section 7.**

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**Per the *Hanford Federal Facility Agreement and Consent Order*, the closure plans are part of the administrative record. It is appropriate for the closure plan to reference the other documents. The administrative record provides the overall detail required to document all activities associated with closure.**

ECOLOGY COMMENT #3: Regarding the first paragraph of RL/WHC's Response #2, concur with the revision of Sections 7 and 7.4 to include additional detail. In addition, the reviewer proposes to defer the identification of the level of detail to be included in the closure plan, to the DQO process, during which it is hoped that an agreement on decontamination activities to be performed during closure can be reached.

Regarding the second paragraph of RL/WHC's Response #2, the documentation of activities is not questioned, but rather, the appropriate identification, within the closure plan, of activities to be performed/conducted during closure which may require concurrence prior to implementation or design. Again, the reviewer proposes to defer the identification of activities to be performed during closure to the DQO process, during which it is hoped that an agreement on decontamination activities to be performed during closure can be reached.

**COMMENT CONSOLIDATION: As agreed at the issue resolution meeting of March 24, 1994, the following comments have been closed and consolidated with Comment No. 39: No. 63 (7-4/47-49) and No. 67 (Figure 7-1).**

**RL/WHC RESPONSE #3: The closure plan will reflect the agreements (using process knowledge and previously agreed upon closure strategy for alkali metal storage facilities) reached at the DQO held on May 24, 1995. Due to a change in closure strategy the 4843 AMSF will not require any sampling for closure determination; therefore a decommissioning work plan will not be necessary to complete closure of this unit. All closure activities will be documented in Chapter 7 of the closure plan.**

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| 40. | ECOLOGY COMMENT #1: 7-9/29. Insufficient information is provided to determine if the schedule for closure is reasonable. This is also inconsistent with the regulatory time frame allowed by the Dangerous Waste Regulations.<br><br>A schedule for closure must include, at a minimum, the total time required to close each dangerous waste management unit and the time required for intervening closure activities which will allow tracking of the progress (WAC 173-303-610(3)(a)(vii). A discussion of the time line provided on F7-3 will help.<br><br>**RL/WHC RESPONSE #1: The estimated time for each closure activity is clearly presented in Figure 7-3 and called out in the document. Restating these time frames in the text is considered unnecessary.**<br><br>**Also see response to Comment No. 39.**<br><br>ECOLOGY COMMENT #2: While the estimated time for each closure activity is clearly presented in Figure 7-3, it appears that only one round of decontamination sample verification is anticipated. In contrast, Figure 7-1, indicates that the sampling flow path anticipates or allows for two rounds of decontamination sample verification in addition to removal of contaminated sections of the building. Verify if the scenario of Figure 7-1 occurred, whether or not closure could be conducted within 180 days.<br><br>**RL/WHC RESPONSE #2: If the second round of sampling is required, it is possible that the closure activities could exceed 180 days and require an extension per WAC 173-303-610(4). The need for an extension would depend on the extent and scope of the additional sampling. The extra sampling step is included to ensure that sufficient funding and resources are available if need. The closure plan will be revised to include this information.** | Closed per Ecology NOD Response Table of 2/28/94 |